# ASSIGNMENT 9

Textbook Assignment: "Computers," chapter 8, pages 8-1 through 8-17.

9-1. Which of the following items are examples of computer hardware?

1. Compilers
2. Assmemblers
3. Transistors
4. Executive routines

9-2. Which of the following items are examples of computer software?

1. Microchips
2. Printed circuit cards
3. Input/output libraries
4. Cathode-ray tubes

IN ANSWERING QUESTIONS 9-3 THROUGH 9-6, SELECT FROM COLUMN B THE PROGRAMMING LANGUAGE THAT PERFORMS THE FUNCTION LISTED IN COLUMN A.

| A. FUNCTIONS | B. PROGRAMMING LANGUAGES |
|---|---|
| 9-3. Used for business only | 1. Jovial |
| | 2. FORTRAN |
| 9-4. Used for real-time systems | 3. PL/1 |
| 9-5. Used for business and scientific programs | 4. COBOL |
| 9-6. Used for large scale command and control Systems | |

9-7. What are the two basic types of computers?

1. Linear and octal
2. Binary and logic
3. Linear and digital
4. Analog and digital

9-8. As it applies to computers, what characteristic applies to the term analog?

1. Representation by means of continuously variable physical quantities
2. Representation by the use of numerical equivalents
3. Representation by the use of graphic analysis
4. Representation by the SWAG

9-9. Because of their design, analog computers have unlimited applications.

1. True
2. False

9-10. What method is used to represent the instructions used by a digital computer?

1. Numerical equivalents
2. Delayed transmission
3. Direct translation
4. Analog input

9-11. What are the two basic types of digital computers?

1. Special-purpose and linear
2. Special-purpose and nonlinear
3. Linear and Nonlinear
4. Special-purpose and general-purpose

9-12. What method is used to change the operation of a special-purpose digital computer?

1. The input frequency is changed
2. The construction of the machine is altered
3. The instruction input is changed
4. The primary RTMS is changed

9-13. What method is used to change the operation of a general-purpose digital computer?

1. The input frequency is changed
2. The construction of the machine is altered
3. The instruction Input is changed
4. The primary RTMS is changed

9-14. In a digital computer, what are a series of electronic devices for the temporary storage of a binary word?

1. Registers
2. Counters
3. Gates
4. Compilers

9-15. In a digital computer, what series of electronic devices progress through a specific binary sequence?

1. Registers
2. Counters
3. Gates
4. Compilers

9-16. In a digital computer, what series of electronic devices are used to set a flip-flop or generate a times condition signal?

1. Registers
2. Counters
3. Gates
4. Compilers

9-17. In a digital computer, what devices are used to control the transfer of data words from one register to another?

1. Registers
2. Compilers
3. Counters
4. Gates

IN ANSWERING QUESTION 9-18. REFER TO FIGURE 8-1 IN THE TEXTBOOK.

9-18. The digital data processor contains what total number of basic units?

1. Five
2. Two
3. Three
4. Four

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IN ANSWERING QUESTIONS 9-19 THROUGH 9-21, PERTAINING TO A DIGITAL COMPUTER CP, SELECT THE UNIT FROM COLUMN B THAT PERFORMS THE FUNCTION LISTED IN COLUMN A. NOT ALL RESPONSES IN COLUMN B ARE USED.

| | A. FUNCTIONS | B. UNITS |
|---|---|---|
| 9-19. | Performs the actual processing | 1. Control unit |
| 9-20. | Stores the data to be processed | 2. ALU |
| | | 3. I/O unit |
| 9-21. | Directs the overall computer operation | 4. Internal data storage unit |

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IN ANSWERING QUESTIONS 9-22 THROUGH 9-25, PERTAINING TO A DIGITAL COMPUTER CONTROL SECTION, SELECT THE REGISTER FROM COLUMN B THAT IS DESCRIBED IN COLUMN A.

| | A. DESCRIPTIONS | B. REGISTERS |
|---|---|---|
| 9-22. | Holds the instruction code during execution | 1. P |
| | | 2. SC |
| 9-23. | Contains the address of the next sequential instruction to be executed | 3. General |
| | | 4. Instruction |
| 9-24. | Stores the quantity used for address modification | |
| 9-25. | Consists of one or two registers to accomplish the holding of a shift count | |

9-26. What computer is the most practical type to use when speed and fully automatic operation is desired.

1. Stored-program
2. Internally stored-program
3. Externally stored-program
4. Multiaddressed-program

9-27. Computer instructions are broken down into what four categories?

1. Bit, byte, digit, and literal
2. Input, output, shift, and double
3. Transfer, control, arithmetic, and logic
4. Binary, octal, digital, and hexadecimal

9-28. Instructions that provide the computer with the ability to make decisions based on the results of previously generated data are known as what category of instructions?

1. Literal
2. Logic
3. Shift
4. Binary

9-29. Each instruction refers to only one operand, and the instructions are normally taken from the memory in sequential order. This is a characteristic of what type of computer?

1. Single-address
2. Single-address-sequential
3. Multiaddress
4. Multiaddress-sequential

9-30. Logic and arithmetic operations are performed in what section of a digital computer?

1. RAM
2. I/O
3. CPA
4. ALU

9-31. After an arithmetic process is completed, the result is stored in what location in the arithmetic unit?

1. The assembler
2. The accumulator
3. The compiler
4. The input/output libraries

9-32. The process by which instructions and data are read into a stored-program type of computer before a calculation is started is known as

1. inputting
2. outputting
3. loading
4. down loading

9-33. Which of the following is the purpose of "bootstrap" Instructions?

1. To cause the program to "branch," depending on whether a certain condition is met
2. To place enough instructions into a computer memory so that these instructions can be used to bring in more instructions
3. To cause the program to terminate if a "bad-data" input is sensed
4. To perform multiplication of certain numbers

9-34. A nonmagnetic toroidal form is used in what type of memory storage device?

1. A tape wound core
2. A semiconductor
3. A ferrite core
4. A thin film

9-35. A toroidal form molded from ceramic iron oxide, possessing magnetic properties, is used in what type of memory storage device?

1. A tape wound core
2. A semiconductor
3. A ferrite core
4. A thin film

9-36. In magnetic core memories, a single core can store how many total bits of a word?

1. One
2. Two
3. Three
4. Four

9-37. In the core element of a magnetic core memory, what condition determines whether a 1 or a 0 is stored?

1. The temperature of the core aperture
2. The absence or presence of a magnetic field
3. The intensity of the magnetic field around the core
4. The direction of the current flow around the core

9-38. Most of the semiconductor memories used in modern digital computers are of what type?

1. ROM MSI
2. RAM SSI
3. MOS LSI
4. NIS NSI

9-39. A ferromagnetic material deposited on a substrate of thin glass is what type of memory storage device?

1. Magnetic disk
2. Magnetic drum
3. Magnetic tape
4. Thin film

9-40. A cylinder that rotates at a constant speed is what type of memory storage device?

1. Magnetic disk
2. Magnetic drum
3. Magnetic tape
4. Thin film

9-41. A storage medium NOT used as a main storage medium due to its long access time, but widely used to store large amounts of data or as a main storage backup, is what type of memory storage device?

1. Magnetic disk
2. Magnetic drum
3. Magnetic tape
4. Thin film

9-42. A convenient storage medium for semipermanent storage of mass volumes of production programs is what type of memory storage device?

1. Magnetic disk
2. Magnetic drum
3. Magnetic tape
4. Thin film

9-43. What section of the digital computer is the interface between the computer and external devices?

1. CU
2. I/O
3. ALU
4. IDSU

9-44. What two methods are used to transmit digital data?

1. Linear and nonlinear
2. Serial and nonserial
3. Serial and parallel
4. Parallel and nonparallel

9-45. Each bit of a binary word to be transmitted must have its own data path. This is a characteristic of what type of digital data transmission system?

1. Nonlinear
2. Nonserial
3. Serial
4. Parallel

9-46. What is the simpler and less expensive method of digital data transmission?

1. Nonlinear
2. Nonserial
3. Serial
4. Parallel

9-47. What type of data transmission permits data transmission by radio?

1. Nonlinear
2. Nonserial
3. Serial
4. Parallel

9-48. What is the least efficient general form of input data to a computer?

1. Manual inputs from a MMI, such as a keyboard or console
2. Analog inputs from instruments or sensors
3. Digital inputs from instruments or sensors
4. Inputs from a source on or in which data has been previously stored in a form intelligible to the computer

9-49. Which of the following limitations is common to most input devices?

1. Not compatible with the computer
2. Requires single-phase power
3. Located a great distance from the computer
4. Involves some mechanical operation

9-50. The output information from a computer generally takes which of the following forms?

1. Codes and symbols displayed on a monitor screen or other device
2. Manually generated control information
3. Information recorded in ROM
4. Software documentation

IN ANSWERING QUESTIONS 9-51 THROUGH 9-54, SELECT FROM COLUMN B THE DEVICE THAT MATCHES THE DESCRIPTION IN COLUMN A.

| | A. DESCRIPTIONS | B. DEVICES |
|---|---|---|
| 9-51. | 12 or more circuits, equvalent in complexity to a typical logic gate | 1. SSI |
| | | 2. MSI |
| | | 3. LSI |
| 9-52. | Fewer than 10 circuits, no more complex than a typical logic gate | 4. VSLI |
| 9-53. | Contains the equivalent to 1,000 or more logic gates | |
| 9-54. | Large and complex circuitry, equivalent to 100 or more logic gates | |

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9-55. A computer program that takes certain commands and translates them into instructions necessary for a computer to execute is what type of program?

1. Converter
2. Interpreter
3. Translator
4. Compiler

9-56. What is the purpose of a subroutine?

1. To store the entire program at various places in order to ensure reliability
2. To eliminate repeating certain groups of instructions throughout the program
3. To enter administrative data relative to the program instruction
4. To “delay” a program

9-57. What type of instructions control access to the various subroutines?

1. Operational routines of the main program
2. Executive routines of the main program
3. Selection routines of the main program
4. Access routines of the main program

9-58. Instructions that provide the computer with the ability to leave the sequential execution of the main program, perform a subroutine, and return to the sequential execution are what type of instructions?

1. Selection
2. Executive
3. Sequencing
4. Jump and return jump

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IN ANSWERING QUESTIONS 9-59 THROUGH 9-62, SELECT FROM COLUMN B THE PROCESS THAT MATCHES THE DESCRIPTION LISTED IN COLUMN A.

| A. DESCRIPTIONS | B. PROCESSES |
|---|---|
| 9-59. To locate errors | 1. Analysis |
| 9-60. To use symbols to represent the various operations to be performed | 2. Debugging |
| | 3. Encoding |
| 9-61. To lay out the problem in a form that will lend itself to interpretation | 4. Flow diagram |
| 9-62. To convert flow chart operations into computer language | |

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9-63. A thorough and rapid method for the detection of failures in a specific portion of a computer is performed by what program?

1. Analysis
2. Debugging
3. Maintenance
4. Error check

9-64. What type of maintenance program is designed to detect the existence of errors?

1. Reliability
2. Diagnostic
3. Utility
4. Locator

9-65. What type of maintenance program is used to locate the circuits in which computer malfunctions originate?

1. Reliability
2. Diagnostic
3. Utility
4. Locator